

# WebNet S-1 Module

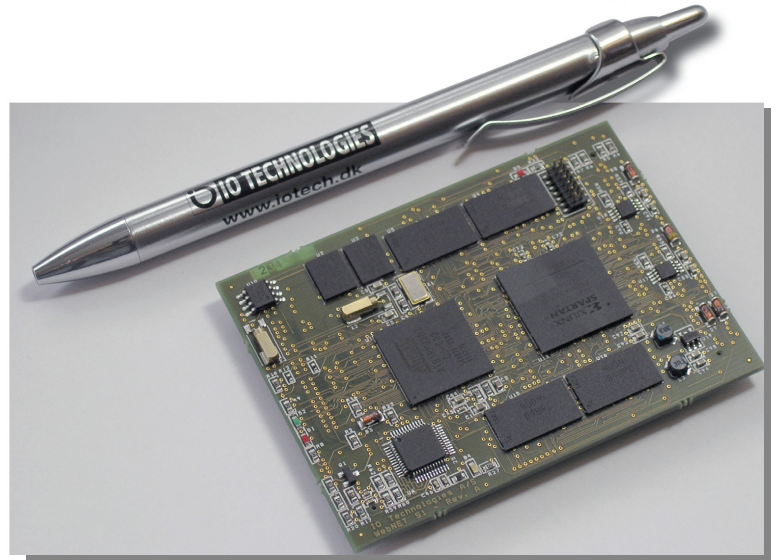
## ARM9 Linux Computer with FPGA Co-processor

### Three Processor System.

The WebNet S-1 is a new generation of Linux modules with both serial and parallel processors.

The module contains three processor systems:

- 200MHz ARM9 computer with up to 32MB FLASH, 256MB SDRAM, Ethernet 10/100, USB 2.0 etc. TFT/LCD interface through FPGA. Linux OS.
- 200MHz FPGA with up to 256MB SDRAM and 64 parallel 100MHz GPIOs. The FPGA can be reprogrammed over Ethernet.
- Independent uController for advanced system monitoring.



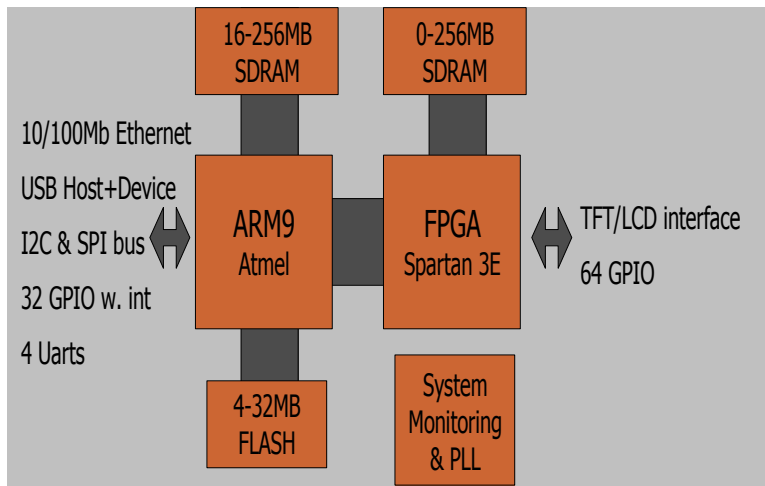
### Serial and Parallel Computing

The ARM9 processor runs a Linux operating system and is a powerful embedded computer for man-machine interfaces and machine-machine network communication and surveillance.

Other OS like ThreadX, Vx-Works and Windows CE are also possible.

The programmable FPGA is a true real-time data processor and may serve many purposes: DSP, flexible display interface, high-speed parallel I/O control, custom interface gateway etc.

The uController serves as system monitor, power watchdog with external monitoring and early warning, temperature and reset logging.



### Fast way from idea to product.

The modules are suitable for both prototyping and production as both memory and FPGA can be scaled to fit performance and cost requirements. The number of systemboards, reference designs and FPGA IPs increases continuously.

**For more information  
please contact:**

**Design Center Copenhagen:**  
Rune Domsten  
rd@iotech.dk  
Phone: +45 36188100

**Design Center Århus:**  
Søren W Mathiasen  
swm@iotech.dk  
Phone: +45 87438070

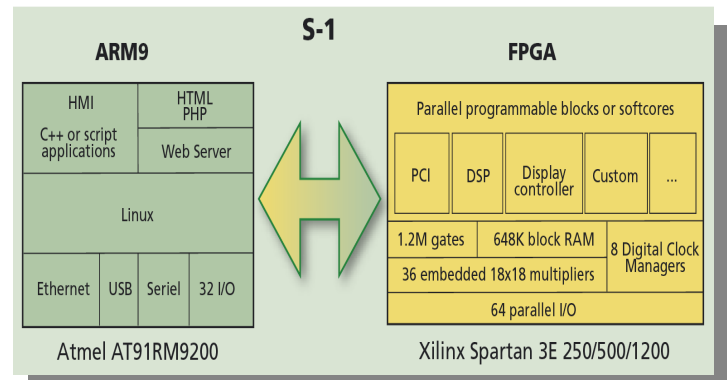


## Numerous Solutions

The combination of a ARM9 processor and a FPGA in a single embedded component can be used in various applications such as:

- a PLC alternative with 64 parallel programmable 100MHz I/O, 1280\*1024 LCD touch display, standard and customized interfaces (RS232/485, CAN, PCI etc.), and system management and software updates over Ethernet.
- Digital signal processing system for vision systems, advanced control systems, multimedia streaming, and IP calls processing etc. A running system can be reconfigured with new DSP algorithms over network, though an internet browser connection to the embedded webserver.

Please contact IO Technologies for an application discussion, if you think the module is relevant in your next design.



## Specifications

- 200MHz ARM9 with up to 256MB SDRAM and 32 MB FLASH memory
- SPARTAN 3E 250/500/1200 FPGA with up to 256 MB RAM for real-time data processing and flexible display support.
- 10/100Mbit/s ethernet.
- Complete Linux OS with http and ftp server.
- Open source development tools.
- USB 2.0 host and device interfaces.
- I2C and SPI buses
- 4 UARTS with TTL signal levels
- Real Time Clock

- Programmable PLL clocks (up to 166MHz)
- 32 CPU GPIOs with interrupt capability.
- 64 FPGA GPIOs
- Flexible LCD interface through FPGA. 300MB/s video-memory bandwidth.
- System management uController (watchdog, temperature, reset logging)
- Power Supply: 3.3V, 2 Watt.
- Size 75 × 55 mm.
- Available at industrial temperature range: -40° - 85°C.

## Standard Configurations and Prices

The S-1 module is highly configurable. Both FPGA, FPGA SDRAM, ARM SDRAM and ARM FLASH size can be scaled to match performance requirements. The table shows five standard configurations: From a lite version without FPGA to a very powerful with

the largest FPGA and SDRAM in all memory banks. Full custom configurations are also available. For more information please contact IO Technologies.

S-1 module ver.	ARM memory Flash		ARM memory SDRAM		FPGA Spartan 3E	FPGA memory SDRAM		Price (estimated) 1K €
	AF1	AF2	AM1	AM2	F	FM1	FM2	
1	8MB	-	16MB	-	-	-	-	68
2	8MB	-	16MB	16MB	250E	-	-	81
3	8MB	-	16MB	16MB	500E	16MB	-	101
4	8MB	-	32MB	32MB	500E	16MB	16MB	115
5	16MB	-	32MB	32MB	1200E	32MB	32MB	149
Custom	4-16MB	0-16MB	8-128MB	8-128MB	250E/500E/1200E	0-128MB	0-128MB	Please contact IO

